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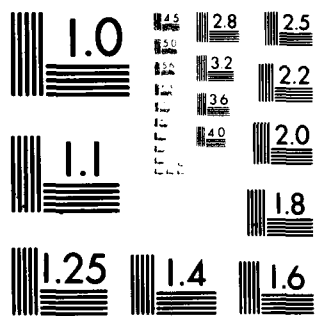
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**A National Emergency
Planning Issue**

EDWARD G. RAPP

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**CONSTRUCTION SUPPORT
FOR MOBILIZATION:**

**A National Emergency
Planning Issue**

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by

**Lieutenant Colonel Edward G. Rapp USA
Senior Research Fellow
Research Directorate**

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FOREWORD

Recent emphasis within our Federal Government on national emergency preparedness has been highlighted by major exercises which have suggested important deficiencies, particularly in the support of the defense mobilization process. Mobilization means more than raising necessary manpower; it also must include expansion of production and essential construction support to provide necessary facilities.

In this monograph, Lieutenant Colonel Edward G. Rapp, US Army, argues that mobilization-oriented construction might be considered the first step in defense mobilization planning. His research into essential preparations for war establishes this focus as a vital national planning issue. As he examines the ways in which the Nation's construction assets might be postured better to support rapid mobilization, Colonel Rapp reminds us that the current lack of awareness of mobilization construction requirements is reminiscent of the period preceding both world wars.

Colonel Rapp synthesizes the history of mobilization and relates it to contemporary conditions. His approach focuses on the role of the Army Corps of Engineers in national emergency planning, in both peace and war. He surfaces issues and presents recommendations both to reduce the construction component as a limiting factor in meeting a defense emergency and to increase it as a consideration in national security planning.

This study illuminates the importance of construction as a basis for rapid expansion of our defense capability, thereby making a significant contribution to a better understanding of actions necessary to prepare the Nation for mobilization of its defense resources.



R. G. GARD, JR.
Lieutenant General, USA
President

ABOUT THE AUTHOR

Lieutenant Colonel Edward G. Rapp, United States Army, wrote this monograph while a Senior Research Fellow in the Research Directorate, National Defense University. A Registered Professional Engineer, Colonel Rapp earned engineering degrees at the Colorado School of Mines and the University of Missouri before completing the Army Command and General Staff College. He is presently assigned as a Mobilization Planner in the Office of the Assistant Chief of Engineers in the Pentagon. Before joining the University, he served as Division Chief in the Program Analysis and Evaluation Directorate, Office of the Army Chief of Staff; Battalion Commander, 802d Engineer Battalion, Korea; Branch Chief/Section Chief, US Army Military Personnel Center; Assistant Operations Officer/Tactical Officer, US Military Academy; and Battalion Executive Officer/Operations Staff, 20th Engineer Brigade, Republic of Vietnam. He is the author of a journal article, "A Unique Description of the Failure of a Brittle Material," in *Rock Mechanics and Mineral Science*, and a study at the Lawrence Radiation Laboratory, "Containment of Buried Nuclear Explosions." Colonel Rapp is a graduate of the Industrial College of the Armed Forces.

PREFACE

This monograph is the fourth in a series on construction support for mobilization resulting from a combined research effort conducted by the National Defense University and the US Army Corps of Engineers Studies Center. The first three monographs were published by the Engineer Studies Center and were targeted on mobilization planners and decisionmakers within the Corps of Engineers. The titles of these monographs are:

Mobilization Environments. Published November 1979. This monograph provides qualitative information on the likely tasks for engineers under three probable mobilization conditions.

Corps Mobilization Posture. Published February 1980. This report assesses the Corps of Engineers' posture for mobilization and recommends specific areas for improvement within the corps' management structure.

Corps Mobilization Capabilities, Requirements and Planning. Published March 1980. This document quantifies, insofar as possible, the magnitude of construction requirements historically and over a wide range of probable future mobilization scenarios.

This fourth monograph, published under the auspices of the National Defense University, has as its target audience national emergency planners, policymakers, and lawmakers external to the Corps of Engineers. The purpose is to crystallize and illuminate through historical inference some significant deficiencies in the current state of national emergency preparedness. I assume sole responsibility for the content of this paper. However, the four papers are linked both in data and in thought. For this reason I acknowledge with deep appreciation the efforts of the Engineer Studies Center and extend particular thanks to Mr. Jerry Greco and Mr. Jim Tate.

EDWARD G. RAPP
Lieutenant Colonel, USA

NOTE: *Inquiries for information about the first three monographs referenced above should be directed to the US Army Corps of Engineers Studies Center, 6500 Brookes Lane, Washington, DC 20315.*

CONSTRUCTION SUPPORT FOR MOBILIZATION:

A National Emergency Planning Issue

I. THE FIRST STEP

Construction is not only the biggest single part of defense, it is also the first step in defense.

Sidney Hillman
Truman Committee Hearings, 1941

Mobilization—the subject is pertinent in today's defense environment. In the Middle East and elsewhere on the boundaries of vital national interest, significant changes are taking place which have renewed interest and debate about the credibility of our national defense strategy. Rapid mobilization, rather than large standing forces, is the cornerstone of US policy in both sizing and posturing our Nation's conventional forces. Thus mobilization preparedness plays an integral role in both strategies. There appears to be a growing recognition that the lessons of our past mobilizations need re-examination under the light of contemporary conditions to insure that capabilities have not degenerated.¹ In the forthcoming defense debates and hearings, our capability to mobilize should be an important avenue for inquiry. This paper is designed to crystallize some issues in one significant area, mobilization construction support.

Today when one mentions mobilization, the usual thought and debate center on the preeminent problems of manpower. Production expansion is generally the second most important issue. Construction, if thought of at all, is well down the list of priorities. Yet in each war this century the Nation's ability to quickly marshal and focus its construction capabilities was the pacing issue in obtaining both manpower and production expansions. We have grossly underestimated facility requirements and costs for construction in our previous wars and we have consistently undervalued the construction industry in mobilization planning.² Maybe we have masked the problem with our own applause. After all, and in spite of all, remember how that World War ditty went, "We did it before and we can do it again." Certainly a positive attitude has a lot to do with success. But the technology

explosion that has occurred since World War II makes a confident reliance on the past a very shaky proposition. We no longer can count on a 3-year warning or a protected industrial base. Technology changes place great stress on both our organization and doctrine for the construction support of mobilization.

There is evidence that indicates that construction will be a problem in a future mobilization. Nifty Nugget, a mobilization exercise conducted in 1978, uncovered shortages in troop housing and out-loading facilities.³ A recent Army study indicates a mobilization troop housing shortfall on the order of a quarter of a million spaces to support even a NATO short war scenario.⁴ In spite of the history and the recent evidences of a problem, it would appear that planning for the next mobilization construction surge has undergone considerable decline. Maybe the problem is an unwillingness to think through the problem. Or perhaps there is an overreliance on strategic force to deter war. More likely the problem is an inability to visualize requirements beyond a hypothetical M-day. This lack of awareness of a mobilization construction requirement is reminiscent of the period preceding both world wars where planners just did not visualize the magnitude of the discontinuity that war preparations impose.

A mobilization day is a significant discontinuity in the processes of the Nation. It is a legal declaration by the President that national defense and survival, not quality of life, are the dominant national goals. On that day emergency provisions of law begin to be implemented and position responsibility and authority, particularly in the Department of Defense, increase greatly. These illustrate just a few of the dynamic changes that occur. Our peacetime management systems and tools have a problem dealing with a discontinuity like that. Even the Five Year Defense Plan (FYDP) presupposes peacetime continuity. The preparations for war in the programming and budgeting world take the form of a continuum, as if an actual M-day will not occur, at least not during *this* program and budget horizon. What DOD would do if M-day were tomorrow is different from what is contained in this fiscal year budget which assumes war will come—sometime. Congress in its responsibility to raise an army needs to know what must be done if M-day were tomorrow. Neither the current budget nor the budget proposal before Congress reflects answers to that question. Understanding steps beyond an M-day discontinuity is essential if Congress is to truly assess the readiness posture of the Nation. Since construction is a precursor for both manpower and production expansion, a deeper understanding of this issue provides valuable insights into the total posture of the Nation for mobilization as well.

The central question is: How might the construction assets of the Nation be better postured to support mobilization? Most of what anyone needs to know about mobilization is contained in our histories. This paper attempts to synthesize that history and relate it to contemporary conditions. The purpose is to surface issues and present recommendations for resolution so that construction will be reduced as a pacing factor in a defense emergency should one occur during the late 20th century. The focus of this paper is on the role of the Army Corps of Engineers in the spectrum of national emergency planning.

What are the desired outcomes of this study? The reader deserves to know the assumptions from which the central question was approached so the motive and reasonableness of the argument might be assessed. In order of their perceived importance, this research assumed that it is in the Nation's interest to:

—**Reduce response time.** In mobilization as in any other emergency service, loss of life and property are mitigated by quick response. Reducing the time required to reorient the Nation's contract construction industry onto defense will pay dividends toward national survival.

—**Maximize use of existing facilities.** In a cost and time constrained environment it is necessary to make use of all feasible nonconstruction alternatives to overcome mobilization facility deficiencies. Where construction is the only feasible alternative, expedient construction standards should apply.

—**Enhance awareness.** The importance of the linkage between defense and the contract construction industry is generally undervalued. Defense planners need a better understanding of the potential that the contract construction industry holds for national defense and survival.

Before developing the issues it is necessary to develop a common background. The next section attempts to answer the question: What are the historical lessons?

CHAPTER I ENDNOTES

1. Zbigniew Brzezinski, *Study of Mobilization Planning (Presidentially Directed)*, Executive Office of the President, Washington, DC, 10 May 1979. This memorandum directs 21 agencies of the executive branch to conduct a coordinated review and analysis of mobilization planning.

2. The best historical evidence of construction as a mobilization pacing issue is contained in the findings of the Truman Committee Hearings and Reports. See in particular:

—US, Congress, Senate, Special Committee Investigating the National Defense Program, 77th Cong., 1st sess., *Hearings*. Parts 1 and 6, 1941.

—US, Congress, Senate, Special Committee Investigating the National Defense Program, 77th Cong., 1st sess., *Report*. No. 480, Part 2, 1941.

3. John J. Fialka, "All Kinds of Foul-up Hamper Army Mobilization," *Washington Star*, 3 November 1979.

4. Department of the Army, US Army Corps of Engineers Studies Center, *Corps Mobilization Capabilities, Requirements and Planning*, Washington, DC, March 1980, p. 49.

II. THE LEGACY—LESSONS LEARNED

The word "miracle" has often been used reporting the exploits of the American Corps of Engineers during the last war In fact, there has been no miracle There has been only the logical result of a peacetime engineer organization unique in the world, which participates actively . . . in the development and execution of great public works of national interest.

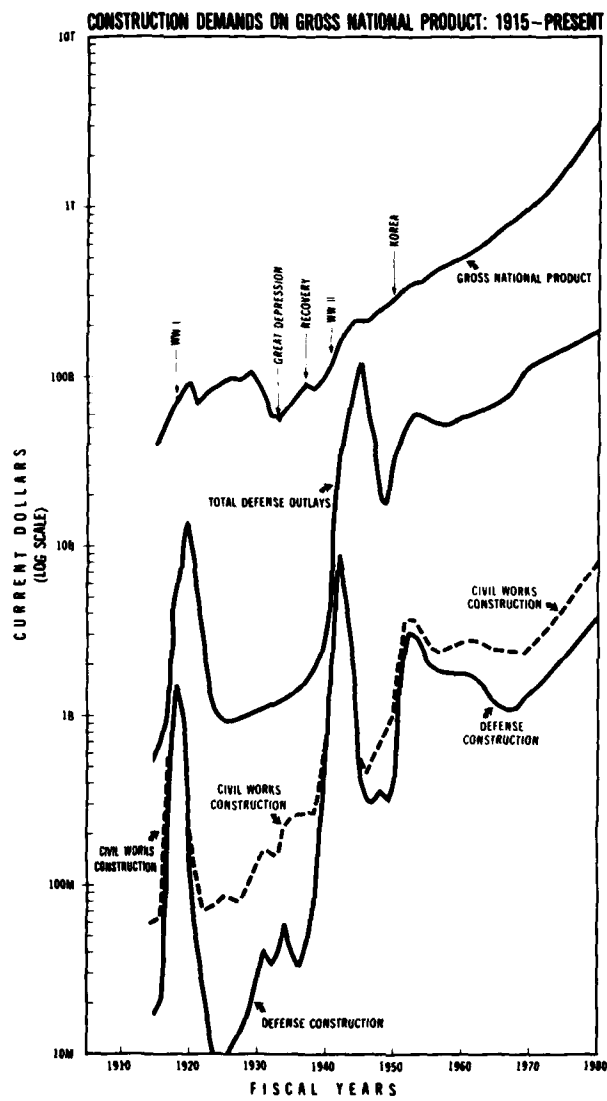
General Robert J. L. Pinson
Chief of Engineers, French Army (1948)

Historical Origins

The Corps of Engineers Civil Works program is the Nation's strategic reserve for mobilizing defense construction.¹ Although to some this may appear as a paradox, the linkage of civil works to mobilization is traceable both in intent and Act of Congress from the early inception of the corps.² The earliest missions given to the corps were for surveys of public routes and properties. In preparation for the War of 1812, districts were formed under the direction of engineer officers to mobilize civilian labor forces for construction of coastal defenses. These districts were expanded after the war to serve in a nation building capacity. Work was primarily centered on improving harbors for commercial shipping. In 1824 Congress institutionalized and codified the use of Army engineers for nation building when it passed into law the forerunner of the Rivers and Harbors Act.³ The Corps of Engineers Civil Works districts continue to serve the Nation, by design not chance, in a dual capacity—nation building during periods of peace and defense construction in times of conflict.⁴ There are many lessons contained in this linkage that are germane to mobilization.

Historical Statistics

Most histories do not do justice to the magnitude of the involvement of the US contract construction industry in the outcome of past wars. For instance, in 1942, 6 percent of the GNP was generated by more than 1 million defense contract construction workers.⁵ The construction surge of WW II diverted Civil Works districts from management of a \$200 million flood control program to management of a military-industrial construction program that emplaced \$18.2 billion worth of cantonments, airfields, and defense plants.⁶ The value of this construction would be more than \$100 billion in current FY 80 dollars.



SOURCES: 1. Newspaper Enterprise Assoc., Inc., *The World Almanac and Book of Facts* 1979.
 2. Dept of Commerce, Bureau of the Census, *Statistical Abstract of the United States: 1978*.
 3. *Historical Statistics of the United States--Colonial Times to 1970*.

Figure 1.

World War II was not an isolated incident. Figure 1 shows the relationships of construction in the United States to gross national product (GNP) from 1915 to present. This is an extremely important graphic in comprehending the magnitude of construction and its significance as a pacing issue. Defense construction reflects the military construction by the Army Corps of Engineers and the Navy Civil Engineer Corps. Both the Army and the Navy serve as construction agents for the Air Force. Civil works construction is that work performed for the civil sector by the Corps of Engineers and is convertible to military construction to support defense construction surges. The surges of defense construction necessary to support mobilization are readily apparent. Notice in a defense emergency that the corps' nation-building resources and efforts were converted to military construction to support mobilization. Notice also that the shapes of the mobilization surges are strikingly similar. Even the size of the surges in World War I and World War II is the same relative to GNP for those periods. Both experiences were *total* mobilizations—the reserve components together with individual replacements were called plus additional forces were created.

The character of the Korean War hump is also the same, although the relative magnitude was less. The Korean conflict was a *full*, not *total*, mobilization. The Nation did not totally mobilize—only existing units of the reserve components and individual replacements were called. No additional forces were created. The period of a relatively high level of defense construction following Korea shows the magnitude of effort required to emplace our strategic nuclear missile bases. Vietnam does not show up on this plot because the Nation did not mobilize. Almost no reserves were called and base construction was done outside the continental United States.

There are some important points to be drawn from this historical plot.

- First, the Vietnam experience is not the model that one should choose when posturing for a future defense mobilization. This experience tends to mask from view and memory some of the more vital lessons from prior mobilizations where national survival was the issue for general war.
- Second, WW I and WW II provide our experience base for **total mobilization of the nation**. A construction surge on the order of 50 times prewar levels can be expected in a total mobilization. Korea is our experience base for a full mobilization of the reserve components short of total war. The con-

struction pulse for this size expansion can be expected in the order of 10 times prewar levels.

- Third, the construction peaks precede the total defense outlay peaks in each mobilization. This is graphic evidence of the pacing nature of construction in a national defense emergency.
- Fourth, mobilization events of our past were huge enterprises. Notice in WW I and WW II, both total mobilizations, that construction outlays exceeded prior year total defense outlays. They were also unpredictable in timing, scope and duration. In November 1938, when the President first called his security advisors together to begin posturing for war, no one visualized the magnitudes or timing that would be involved.⁷ In fact the scenario we sized and postured our defense on prior to each experience was not the scenario that occurred. Our two experiences in Europe were not short wars.
- Fifth, mobilization requirements and priorities cause dynamic reorientations that fall squarely on the shoulders of the US contract construction industry. This involves more than just new jobs and dislocations of the work force. It means changing design and construction standards from "permanency" to "expediency." Because time is the critical resource, it also means changing contracting and management procedures. The impacts are dynamic on the Nation's economy and involve sectors well beyond those pertaining solely to defense.
- Sixth, the civil works portion of the defense construction management structure is only a partial cushion for the explosion in workload. Management doctrine and procedures have to be streamlined to permit much more to be done within the same general management framework.

Lessons Recorded in Law

There are significant lessons pertinent to mobilization embodied in our law. We tend to undervalue their legal necessity until we find ourselves once again deep in crisis. For instance, in the Civil War, Congress recognized that it as a body could not adequately visualize needs and appropriate funds to meet the fluid conditions of mobile warfare. The results was the Feed and Forage Act of 1861.⁸ This act permits the Secretary of a military department to expend funds for the immediate needs of the Service without an appropriation from Congress. The lesson is that the public goals and expectations change

with the degree of emergency. Whereas our law in peacetime attempts to promote social reform, strengthen the free enterprise system, and appeal to perceptions of fair play, the law in war provides certain reliefs to permit immediate action for the protection of the national entity. The Nation's value system changes. The profit motive, applauded in peace, tends to be viewed as profiteering in war. Patriotism becomes a vital motivator.

It would be inaccurate to say that all of the emergency provisions must be employed or that all provisions needed are already contained in law. Since our last major mobilization significant new bodies of social, environmental, and safety law have come into being and few of these laws were written with war in mind. The appendix contains a listing of those provisions of law impacting on mobilization construction. The interrelation of response time, emergency law, and public trust is an issue for further discussion later in the paper. The point here is that there are significant provisions in law that reflect the value systems of this Nation at war. We have learned significant lessons and recorded them in law. Prudent use of these provisions, not necessarily new law, is required on M-day.

Lessons Recorded in Management Doctrine

There are other lessons that have been institutionalized. The quotation that introduces this chapter illustrates that we have learned to value and institutionalize the concept of engaging our military engineers in large nation building enterprises during peacetime so that we can maintain a large management force in contact with industry. This provides the Nation with economies of effort and scale in peace and war. The synergism of this relationship is the centerpiece of the Corps of Engineers' organizational and management doctrine for civil works.⁹

Another lesson is decentralization. While it is true that some functions such as the setting of priorities for scarce materials have to be centralized in war, decentralization of most construction management and real estate activities is vital.¹⁰ The Corps of Engineers is structured in a decentralized mode for execution so as to maintain close contact with regional conditions. In the case of nuclear war, this point is crucial since recovery to a large extent must be initiated from local levels.

In addition to the lessons learned and institutionalized above, there are significant lessons which apparently have been forgotten. Those are the issues that this paper attempts to identify after we

develop an understanding of the existing conditions in the US contract construction industry and in the Corps of Engineers civil works program.

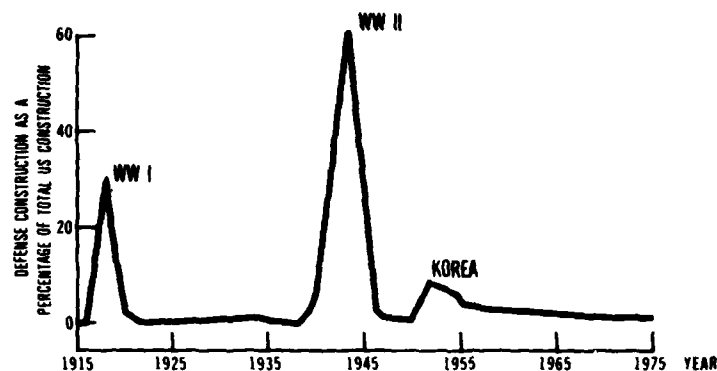
The Construction Industry

The US contract construction industry is the Nation's largest category of industrial employer.¹¹ The industry is represented in Washington by the Associated General Contractors of America, Inc., a powerful lobby for construction interests. The organization represents more than selfish interests. Its creation was a direct result of the WW I mobilization. Its founding purpose was to provide a forum in Washington to overcome the confusion that the emergency conditions of that war had brought to the industry.¹² Since that time, its purpose has been to project trends and to lobby so that the industry can more effectively serve the Nation's construction needs while preserving the principles of the free enterprise system.

The contract construction industry is not a monolith. Even though the industry since 1950 has generated a consistent 9 to 12 percent of the gross national product, it is made up of literally thousands of fiercely independent contractors. As a result, the industry exhibits a great flexibility to demand. Figure 2 shows defense related construction as a percentage of total construction in the United States from 1915 to 1975. This portrays vividly the industry's flexibility and responsiveness in national defense emergencies. Notice in 1942 that 60 percent of the industry was converted to defense construction. That peak represents 5.3 percent of the total GNP.¹³ Such a shift does not occur without major efforts both by industry and government to resolve labor, materials, real estate, funding, and contracting problems. The mechanisms to get this shift of effort while minimizing confusion are a major issue of this paper.

War is not the only important circumstance where the Association of General Contractors has provided a vital coordinating role between industry and government. Examples include the post-WW II housing surge and construction of ICBM bases, space launch facilities, and the interstate highway system. Recently, President Carter asked the industry to appraise the impact of his proposed \$88 billion construction program for energy production facilities. The response, although related to energy mobilization and not defense mobilization, is indicative of the current posture of the industry to undertake another large national enterprise. The Associated General Contractors reported to the President that this massive undertaking is feasible within the existing economy. However, the association cited a

DEFENSE DEMANDS ON THE CONSTRUCTION INDUSTRY



Source: Dept of Commerce, Construction Review.

Figure 2

number of the regulatory restrictions introduced in the last decade that must be sharply moderated or waived in order to meet the time requirements.¹⁴ The restrictive conditions cited involved social, labor, and contracting regulations as well as materials and funding problems. This raises the issue of the degree to which government should hold to normal procedures when extraordinary conditions and performance are required. Currently, the industry seems to address national problems in a cooperative fashion and has demonstrated that it can respond provided that Government furnishes enlightened guidelines and leadership commensurate with the magnitude of the undertaking.

Corps of Engineers Civil Works

Decentralization and size are the key features of the corps' civil works structure. The civil functions are performed by 37 district offices and 12 division offices located throughout the continental United States, Alaska, and Hawaii. Within this structure are 800 officers and 48,000 civilian employees controlling and operating a \$3 billion annual program of water resource management and flood control.¹⁵ Incidentally, this is the approximate size of the structure prior to WW II. Figure 3 shows the decentralized location of these offices. The district is the basic operational unit within the structure. Each district is organized to be self-sufficient in the necessary skills of engineering design and management. Notice that the boundaries are apolitical.

The orientation is on natural drainage basins. This reflects the mission orientation on water resources development and disaster containment within natural boundaries.

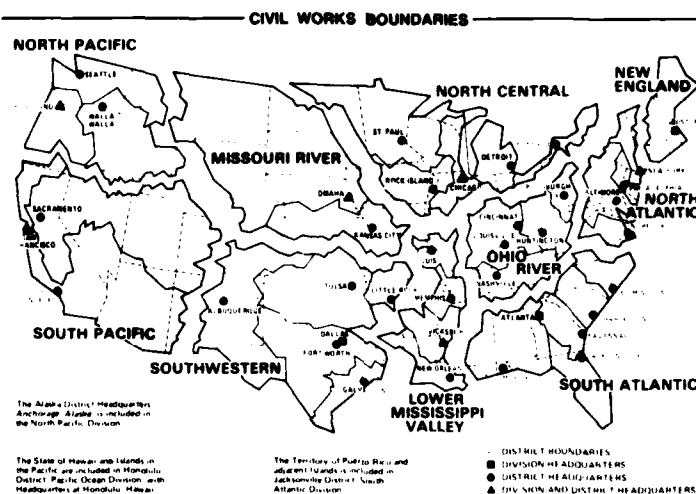


Figure 3.

Command, control, authorizations, and funding for civil works are maintained separately from the Defense Department. Although division and district offices are commanded by active duty officers, the cost of these spaces is reimbursed to the DOD. Civilian control is maintained by the Secretary of the Army who reports directly to the President on civil works matters. The normal military chain of command through the Secretary of Defense is not involved except to maintain a general cognizance of the asset for mobilization and civil defense. Day-to-day civilian control of policy is maintained by the Assistant Secretary of the Army (Civil Works). Civil works funding is not contained in the defense budget. Specific civil works projects are authorized and funded by separate appropriations of Congress. One should understand that civil works is sized and structured based on the requirements of ongoing peacetime projects and activities. It is not sized, like DOD is sized, on standardized scenarios. Scenarios are important, however, in defining the spectrum of conditions for which the corps must be postured in emergencies.

The Corps of Engineers is responsible under law for actions in a broad spectrum of emergency conditions that range from natural disaster to nuclear holocaust. Fundamental authority and respon-

sibilities are contained in the Title 10 (Armed Forces). Responsibilities for water resources protection and disaster relief are found in Title 16 (Conservation), Title 33 (Navigation and Navigable Waters), Title 42 (Public Health and Welfare), and Title 43 (Public Lands). Civil defense responsibilities are contained in Title 10. All these missions have one thing in common. The corps is charged to mitigate loss of life and property in national disasters whether the source of events is natural or manmade. The spectrum of emergency scenarios for which the corps must be postured is graphically depicted in Figure 4. Whereas the Army must size its forces based on a planning scenario, the corps must posture whatever resources it has for the entire spectrum of occurrences.

EMERGENCY RESPONSE SPECTRUM

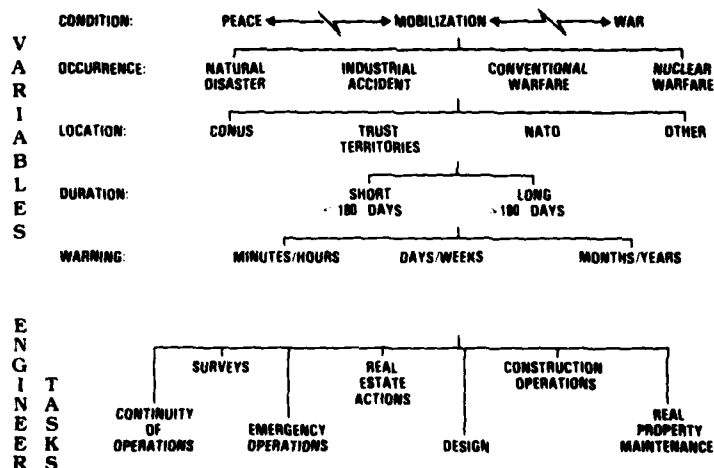


Figure 4.

There are a vast number of possible scenarios that the corps might have to deal with. For instance, one can trace out a short-warning, short-duration, NATO, conventional war scenario. The other probable peacetime, mobilization, and wartime emergency scenarios can also be postulated. Figure 4 makes clear a reality—that the tasks performed under all scenarios are essentially the same. Many of the tasks performed in the cleanup following a hurricane are similar to the tasks to be performed following a nuclear attack; the variation lies in the scale of the workload and long term effects. The peace side of this

emergency response matrix is exercised almost continuously by Mother Nature and occasionally by large industrial accidents. The country averages about 30 disasters a year of a size requiring the Corps of Engineers to make a contribution to recovery. The corps is proud of its results and is good at mitigating losses under these conditions.¹⁶ But these events do not compare in magnitude to those experienced and postulated in preparation for, conduct of, and recovery from war. This generates a series of questions about what has to be done, what rules have to be changed, and what organizational shifts are needed as the Nation transitions discontinuously toward the war side of the matrix.

Perspective on the Future

There are definable trends and conditions which allow us to place some of the experience of the past in perspective for the future. The most forceful trend impacting mobilization doctrine and support organizations is the surge in technology. Technology has greatly altered space-time relationships. This in turn increases the probability of conditions previously not experienced.

A shorter warning period.¹⁷ We can expect to have a greatly reduced response period—perhaps 2 weeks for a conventional attack or only the flight time of missiles for a surprise nuclear attack. More likely the buildup of international tensions in some strategic area of the world will provide longer warning. But the response period of WW II which permitted considerable time for vacillation and error should not be counted on.

An immediate troop facility shortage.¹⁸ The current NATO strategy is forward deployment and rapid reinforcement. Assuming this strategy is successful, the effect on the CONUS base will be a rapid rise in active duty populations at mobilization bases as early deploying active duty and reserve component units assemble, complete training, and await transport. Projections indicate that the CONUS base is significantly short of barracks space during this early time period even though troops double up (55 square feet per man). Assuming deployments go as scheduled, the housing problem diminishes after about 60 days as more transport becomes available for deployment of these units. A second population hump occurs approximately one-half year after M-day as draftees begin to enter the training base in large quantities. Should the deployments not go as planned, and it is possible that they would not, a massive troop housing shortage *a la* WW II will occur.

An increased requirement for real estate.¹⁹ World War II unit training required more space than WW I unit training because of the quantum leap in effective range of weapons. Currently Fort Irwin is the only post in the US with sufficient open space to maneuver a modern mechanized battalion under conditions approaching the time and distance factors of combat. The demands for training ranges will exceed that experienced in WW II. This creates a massive real estate problem if activated units are to be trained in a realistic manner.

An exposed homeland. Unlike WW I and WW II there are no guarantees of a protected homeland. The Nation has not faced the condition that our homelands are intimately exposed to the horrors of war since Pearl Harbor and, before that, the Civil War. This is an ingredient that can only add magnitude and complexity to the construction mission.

On the other hand, we should not sell our construction potential short in the face of adversity. Recall Figure 1 presented earlier. The magnitude of the construction pulse in WW I was related to the Nation's technology and economy at that time as the WW II construction pulse was related to its time. Both were total mobilizations. Both required total focus of the Nation's ingenuity and energy. Although our mobilization planning, programming, and budgeting system does not plan for the use of the full potential of the Nation's construction ingenuity and energy at this time, there is a huge untapped potential. How do we unleash the construction support potential contained in our \$2.4 trillion sleeping giant?

Perspective at the Civil-Military Interface

Most treatises on mobilization assume a perspective viewing the problem from the top of the defense management pinnacle looking downward. It is important to understand the management perspective at the decentralized level where the work of mobilizing construction actually gets done. Visualize the situations of the district engineer and the contractors he is negotiating with on M-day plus one.

Assume you are a district engineer like the colonel in command of the Baltimore District. An attack on NATO appears imminent. The President just declares a National Defense Emergency under PL 94-414. The reserve components are being called to active duty and current active duty divisions have been alerted for deployment. Within the boundaries of Baltimore District are military troop facilities located at the Military District of Washington, Fort Meade, Andrews Air Force Base, Fort Indiantown Gap, Fort Belvoir, Aberdeen Proving

Grounds, and Scranton Army Depot. According to troop stationing plans, the influx of reserves will exceed the capacity of these installations by some significant number within the next 30 days given even the earliest and most optimistic deployment schedules. In addition to troop facilities, work must be done on the Scranton Ammunition Plant, Edgewood Area-Aberdeen Proving Grounds, and Letterkenny, New Cumberland, and Tobyhanna Depots.

As district engineer you are also the harbor master for the port of Baltimore responsible for maintenance of the port and the channels leading to the port. Critical installations at the port and the water supply system of Baltimore and Washington, DC, must be protected from sabotage. Crisis relocation plans for both your headquarters and the civil population of the major cities are being dusted off. On this first day of mobilization there is no way of predicting whether this crisis might escalate into a short war or a long war. *An attack on NATO might even be deterred by aggressive mobilization efforts.*

Given that you are fully engaged in peacetime activities, what projects do you stop in order to meet the demands of the new mobilization activities? Are your authorities adequate for the mission? What new interrelationships are necessary with local, state, regional and national agencies? Who's in charge of what? These are the issues that must be resolved on the government side of the equation. These problems are repeated in similar fashion in 37 districts across the country.

On the civil side there are equivalent problems. Contractors in the Baltimore area may at any one time be engaged in projects for any one of 17 federal agencies. In addition to water resources projects for the Corps of Engineers, there is work being done in housing (HUD Section 8, a \$4 billion annual program); in pollution abatement (EPA, a \$7 billion annual program); in inner city block improvement (HUD, a \$4 billion annual program), and numerous others. All of these contracts contain clauses which permit the government to modify or terminate the contract in the event of a national emergency. What is the government plan to stop work on nonessential or lower priority work in this emergency and reorient the construction efforts into national mobilization? What are the rules governing emergency construction with regard to business enterprise requirements, e.g., small/disadvantaged/minority/women? What relief can be expected from safety and environmental constraints? How will existing contractual commitments to build at a fixed price be protected in the squeeze for workers, materials, and equipment? How do we protect small communities from boom or bust? Who's in charge?

These are not new questions. They are simply lessons from history now generally forgotten. The tools of government in managing a peacetime continuum simply do not address these questions. Planning for natural disasters does not get into the magnitude of workload and disruption involved in mobilization. These questions form the basis for some of the issues that must be resolved if rapid mobilization is to be a viable component of our national defense strategy.

CHAPTER II ENDNOTES

1. US. Congress, House, Committee on Military Affairs, *Hearings before the Committee on Military Affairs*, 77th Cong., 1st sess., 30 September 1941, p. 11. Reaffirmed by C. W. Duncan, Jr., Deputy Secretary of Defense, in a memorandum for the Director, Office of Management and Budget, Washington, DC, 8 January 1979. For a foreign analysis on this point see G. N. Tack, "The Engineer Task in Future Wars," *Royal Engineer*, Vol. 68, June 1954, pp. 108-123.

2. *Military Peace Establishment Act*, 1 Stat. 132 (1802). *Appropriations for the Military Establishment Act*, 1 Stat. 183 (1824). *Military Peace Establishment Act*, 2 Stat. 206 (1803). It is interesting to note that the authorization and appropriations creating a Corps of Engineers are contained in documents deliberately posturing the Army for peace. The first missions were to survey water and overland routes.

3. *Improvement of the Ohio and Mississippi Rivers Act*, 4 Stat. 32 (1824). This act formalized the role of the Army Corps of Engineers in water resource development. See also W. J. Hull and R. W. Hull, *The Origin and Development of the Waterways Policy of the United States* (Washington, DC: National Waterways Conference, Inc., 1967).

4. The dual role of Civil Works is vividly portrayed in the histories of the individual district offices. See for instance:

- Department of the Army, Army Corps of Engineers, *History of the Honolulu District*, by Ellen Van Hatlen, Honolulu, 1970.
- Department of the Army, Army Corps of Engineers, *Of Men and Rivers*, by Harry B. Mills, Vicksburg, 1978.
- Department of the Army, Army Corps of Engineers, *History of the Los Angeles District, US Army Corps of Engineers: 1895-1965*, by Anthony P. Turhollow, Los Angeles, 1975.
- Department of the Army, Army Corps of Engineers, *A History of the Little Rock District, US Army Corps of Engineers, 1881-1979*, by Floyd M. Clay, Washington, DC, 1979.

5. US, Department of Commerce, *Construction Review*, Vol. 24, No. 8, December 1978.

6. Lenore Fine and Jesse A. Remington, *US Army in World War II, The Corps of Engineers: Construction and the United States*, Washington, DC, 1972, p. 703.

7. Department of Commerce, *Construction Review*. The initial estimate of the mobilization requirement in WW I was for 32 cantonments at a total cost of \$90 million. The actual cost of all the mobilization construction effort was over \$1 billion. In WW II the initial estimate of the construction requirement was \$516 million. The final costs were over \$18 billion. Planners did not visualize the miles of roads, the rail spurs and utilities, or the quantities of ancillary facilities necessary to mobilize a nation and sustain an Army at war. See the Truman Committee, *Report*, No. 480, Part 2, 14 August 1941, pp. 1-7.

8. *Feed and Forage Act*, 41 Stat. 11 (1861). Permits the Armed Services to purchase clothing, subsistence, forage, fuel, quarters, transportation, or medical and hospital supplies which, however, shall not exceed the necessities of the current year, without an appropriation from Congress.

9. LTG John W. Morris, Chief of Engineers, "Engineers: Mobilized for Peace and War," *The Military Engineer*, Vol. 72, No. 465, January-February 1980, pp. 4-8. See also US, Congress, House, Committee on Appropriations; *Statement before Subcommittee on Energy and Water Development*, 96th Cong., 2d sess., 5 February 1980.

10. Eugene Reybold, Chief of Engineers, "Mobilizing Construction for Victory," *The Constructor*, March 1942, p. 53. See also the statement of GEN George C. Marshall before the House Committee on Military Affairs; *Hearings to Make Provisions for the Construction Activities of the Army*, 77th Cong., 1st sess., 30 September 1941, p. 12.

11. Paul N. Howard, "President's Message," *Constructor*, Washington, DC, December 1979, p. 2. See also US, Department of Commerce, *Construction Review*, Vol. 25, No. 3, March 1979, p. 60.

12. Associated General Contractors of America, Inc., *Report of Managing Director*, New York, NY, 2 October 1939. See also Associated General Contractors of America, Inc., *Report of the Managing Director*, Memphis, TN, 5 February 1940.

13. US, Department of Commerce, *Construction Review*, Vol. 24, No. 8, December 1978, pp. 1-5.

14. Associated General Contractors of America, Inc., *Response to President Carter's Energy Initiatives*, Washington, DC, 13 September 1979.

15. LTG John W. Morris, *The Military Engineer*. Vol. 72, No. 465, p. 4-8.

16. Recent examples of natural disasters in which the corps played a major role in cleanup operations are: Mt. St. Helens eruptions, Hurricane Frederick, and the Wichita Falls, TX, tornadoes.

17. Harold Brown, *Department of Defense Annual Report Fiscal Year 1981*, Washington, DC, 1980, pp. 48, 65, 85, 98, 117.

18. Department of the Army, US Army Corps of Engineers Studies Center, *Corps Mobilization Capabilities, Requirements and Planning*, Washington, DC, March 1980. Chapter III and Annex D.

19. See Fine and Remington, p. 174. For a general division of the requirements in 1941, see the Truman Committee Report, p. 4.

III. THE ISSUES—LESSONS FORGOTTEN

There is nothing new in the world except the history you do not know.

Harry S. Truman

It is dangerous to assume that all the lessons of past mobilizations are now incorporated into existing war plans, policies, and procedures. The issues presented in this chapter are not necessarily new; most represent only a futuristic twist to issues surfaced, usually only after some bitter experience, in each previous mobilization. The challenge is whether we are smart enough to identify the history we have forgotten before we predestine ourselves to relive the same bitter experiences.

Issue: Mobilization Planning and the Short War Syndrome

Some theorists tell us that the next war, large or small, will be a short war. Limited war for limited objectives fought on the boundaries of superpower interests will be short, intense affairs characterized by rapid deployment and lethal fires. Total war for total objectives will be fought with nuclear weapons and will terminate rapidly when exchange ratios clearly favor one adversary or the other. In either case there will not be time for creation of additional forces or production base expansion. Thus, the concept of total mobilization in the manner of past World Wars is passe. They hypothesize that there might not even be time for full mobilization of the reserve components. To minimize risk we should concentrate all resources on forward deployment and a short war strategy. Right? What if the short war theory is wrong? General E. C. Meyer, the Army Chief of Staff, says, "One who plans a short war is apt to get a short losing war."¹

All "next wars" are short wars. History is replete with optimistic predictions about "the duration." The truth of the matter is that our current infatuation with short war planning repeats our history and defies its lessons. Prior to WW II the buzz word equivalent to the current day "rapid deployment" was "immediate readiness." Mobilization plans called for immediately ready units to begin deploying 5 days after M-day.² As the preparations for WW II began, the ramifications of this optimistic concept became abundantly clear. We were mobilizing a million men without a declared war and with no place to put them, no space to train them, and no production base to

support them. Congress was both incensed and chagrined at the lack of prior planning.

In the spring of 1941 each House of Congress began to investigate allegations of undue delay, cost overruns, and malfeasance in the Army's mobilization activities. Land acquisition and construction programs were the initial targets for inquiry. The Senate investigation was chaired by Harry S. Truman and the House investigation was chaired by R. Ewing Thomason. The hearings and reports of these committees are filled with stinging lessons about what ought not be forgotten in planning for mobilization. The gist of the Senate findings is summarized in this Truman rebuke:

Plans for mobilization of a million men contemplate a place to put them and place to train them. Evidently you did not have it.³

The Thomason investigation laid the blame for inadequate mobilization plans as follows:

It is obvious that Congress must share with the Army any censure for failing to foresee a situation that seems so clear today.⁴

It was then so clear that there had been no investment in planning for mobilization construction. In addition there were no mobilization plans made for circumstances where forward bases were unavailable or where early deployments were not desirable. Both investigations cite this lack of visualization and plans as the root cause for the problems then being experienced. Truman, in an attempt to fix blame on an individual, bore in on this failure and called before his committee both active and retired generals for questioning. In reading the testimony one can visualize the same questions being asked and the same answers reluctantly being given under today's environment.

Question: And you had no plans which contemplated that the men might not immediately go to the front?

Answer: We had no plans which contemplated a large Army in time of peace; that is, in barracks.

Question: What plan did you have to take care of them?

Answer: We were going to put them in tents.

Question: And where?

Answer: I don't know

Question: Did you have any detailed layouts for those — (camps)—?

Answer: No.

Question: Did you have any plans for utilities for them?

Answer: No, no.⁵

How did competent officers, whose experience base included mobilization and camp construction in WW I, produce such ill-conceived and inadequate planning? Throughout the testimony it is evident that the General Staff assumed that the Nation would never again "afford" the great cantonments built for WW I. They had witnessed the investigations of malfeasance and profiteering following WW I and had become so used to doing without during the 1930s that their requests were limited to what they thought they could get from a Congress concerned primarily with social and economic problems. Truman questioned why the Army had not asked for planning money when it was obvious that one dollar in planning would have saved at least seven dollars in haste and waste then being experienced. The Under Secretary of War, the Honorable Robert P. Patterson, testified:

If any officer a couple of years ago had said, 'I want \$15,000,000 to lay out possible camps,' I submit that they would have made short shrift of him. Why, they would have said that it was fanciful. They would have wanted that officer looked into as to his ability and capacity.⁶

All of the thought and planning was geared to "immediate readiness" of existing forces using existing facilities and peacetime resources levels.

This is not 1938 but we are suffering from a similar malady. Our planning view is constrained by considerations of what can be afforded in peacetime. We have not laid plans to employ efficiently and effectively all of the resources of our Nation suddenly aware and committed to national survival. If war were suddenly imminent and the President declared an M-day tomorrow, Congress would once again be incensed and chagrined. There are no comprehensive M-day construction and support programs to lay before Congress. There are no comprehensive project listings and real estate acquisition plans and few cantonment schematics. All that exists now is a short war mobilization concept that visualizes double bunks, tents, and rented motel space until the troops deploy to overseas or until the crisis passes.⁷

Who is at fault? The system is at fault, including the continuum management tools we use. In the crunch of peacetime zero basing and affordability, spending money to draw up plans for camps that may never be used, to design and build production facilities that may never be needed is considered fanciful even for the limited requirements of full mobilization. The system places these things in priority

after the backlog of maintenance and repair, traditionally the lowest priority construction item funded. Further, no one asks to see mobilization plans. No one, as in Truman's days in Congress, has said "show me the layouts and plans for housing the force, show me the real estate requirements and acquisition plans for the training areas." No one has asked what we must build if we activate the total force.

Table 1 shows what ought to be contained in a mobilization construction program. It is relatively easy to define the customers and determine in general what needs to be done. But the "how much" column is not defined for any of the probable mobilization conditions. Based on the current level of the economy and historical precedent, one should expect full mobilization construction requirements on the order of 10 to 30 billion dollars. A total mobilization construction program would cost 100 to 150 billion dollars.^a Where are the plans for that? DOD has not defined the requirements.

Table 1.

FULL MOBILIZATION WORKLOAD--A FRAMEWORK

WHO	WHAT	HOW MUCH
PEACETIME CUSTOMERS	PROGRAM REORIENTATION TERMINATE NONESSENTIAL CONTRACTS	UNKNOWN
FORSYTH TRADOC DARCOM AIR FORCE	TROOP/INSTALLATION SUPPORT CONSTRUCT TROOP FACILITIES EXPAND UTILITIES EXPAND TRAINING AREAS ENHANCE NONINDUSTRIAL FACILITIES EXPAND COVERED STORAGE	250,000 MEN* 58,000 MEN* UNKNOWN UNKNOWN UNKNOWN
DARCOM AIR FORCE	PRODUCTION BASE SUPPORT ACCELERATE MAINTENANCE EXPAND FACILITIES REHABILITATE RAIL SPURS	UNKNOWN UNKNOWN UNKNOWN UNKNOWN
MTMC NAVY	TRANSPORTATION SUPPORT DREDGE EXPAND PORT FACILITIES EXPAND CHOKER POINTS	UNKNOWN UNKNOWN UNKNOWN UNKNOWN
HEALTH SERVICES COMD	FACILITIES SUPPORT	UNKNOWN
COMMUNICATIONS COMD	FACILITIES SUPPORT	UNKNOWN
OTHERS	OTHER SUPPORT (NUCLEAR PREPARATIONS) ACQUIRE/DEVELOP REAL ESTATE MANAGE CONSTRUCTION	UNKNOWN UNKNOWN UNKNOWN

* ARMY DATA ONLY, CURRENTLY UNDER REVISION

Even though mobilization is primarily a defense issue, some mobilization planning should be accomplished as a visible part of the civil works program. Mobilization fits into national emergency

preparedness planning between natural disaster and civil defense and should be specifically supported. Currently the resources for emergency preparedness fall into that unwashed category of overhead. In the press of day-to-day activities, planning for general emergencies is slighted. Planning becomes someone's secondary or tertiary duty. At the district level where construction planning must be done, this must be corrected. Resources for emergency preparedness planning, including mobilization, should be identified as a separate line item in civil works appropriations. Given that 1 dollar in prior planning would have saved 7 dollars in haste and waste, investment in detailed mobilization construction plans is not fanciful. That is not only a high cost-benefit ratio, it is something we must invest in to insure a viable national strategy. We must overcome the short war syndrome and plan in detail the construction needed after M-day.

Issue: Emergency Powers

During the past mobilization experiences, time was the critical resource. Technological improvements in the Soviet threat make response time even more critical for the future. Warning of a substantial conventional attack may be as short as 2 weeks. Warning of a nuclear attack may be only the flight time of the missiles. While these are the lower limits on warning, deteriorating diplomatic relationships may foretell an attack in ample time for a deterrent mobilization. In either case, short warning or deliberate buildup, success will be largely a measure of how effectively we can respond in the time available. It is not enough to have the Corps of Engineer's Civil Works program as a strategic reserve. And it is not enough to have a healthy, responsive construction industry. In addition to these and detailed plans on the shelf, the procedures of government must permit a timely response.

Normal procedures for contracting goods and services are not adequate for mobilization. They are based on peacetime socioeconomic factors. In emergencies the public's goals and expectations change with the degree of emergency. In an emergency the public expects immediate action and protection. During the warning period M-day to D-day or M-day to standdown, emergency procedures must be geared to generate maximum national power in consonance with the emergency ethos of the Nation.

The process of converting to emergency procedures begins with the declaration of a national emergency. Mobilization should be a

conscious, controlled decision. The authority to exercise emergency powers in law is not automatic. The President must specify in his declaration of a national emergency or in subsequent Executive orders "those provisions of law under which he, or other officers will act."⁹ It is through these means that the President can control the transition to emergency powers. A surprise attack may dictate a Presidential declaration specifically imposing all or nearly all emergency provisions contained in the US Code. For other scenarios the President may selectively choose emergency powers appropriate in that particular time frame. Historically we have done neither. The Nation in the past has tended to slide in and out of states of emergency amid confusion and with no clear indication as to the specific emergency powers governing in any time frame. Standby Executive orders specifying those provisions listed in the appendix need to be prepositioned prior to M-day. Procedures for use of these provisions must be described in detail in regulations and other implementing instructions prior to M-day.

The executive branch must be prepared to decentralize contracting authority, in particular by expanding dollar thresholds. Early in WW II it became necessary to decentralize authority in order to handle the magnitude of contract work. Authorities were expanded by a factor of 10 or more in most areas where dollar thresholds were imposed. For instance, division engineers were given authority to negotiate contracts up to \$5 million and district engineers had a ceiling set at \$3 million.¹⁰ Presently the ceiling for minor construction that can be accomplished without specific authorization by Congress is \$500,000. This limitation is only one example of thresholds that ought to be expanded on M-day. The increased contracting workload must be handled by decentralizing selection and award. It is necessary to establish policy controls and broadly expanded levels of authority now so that mobilization planning can proceed using M-day rules, not peacetime rules.

Contracting procedures to be used in mobilization must be laid down in advance. In each previous mobilization experience, the use of cost-plus-a-fixed-fee (CPFF) contracts has been a hotly debated issue.¹¹ In 1917 and again in 1940, the initial pulse of mobilization construction was accomplished by CPFF contracts. The widespread use of this type contract is controversial and trouble-prone because it cuts short competitive bidding and contains no incentive to increase productivity or to reduce cost. The utility of the procedure is that it allows construction to begin before plans and specifications are finalized and it provides guarantees to the contractor that he will not be broken by rapidly rising and unpredictable labor and material

costs. The decision to use CPFF under certain conditions where rapid construction is essential should be made in peacetime to ensure a clear course during mobilization.

Even with prescribed contracting procedures, there are problems that must be resolved at the civil-military interface. CPFF is a negotiated contract wherein issues of policy, contractor selection, negotiation, execution, and review surface. In each instance of its use, it has been necessary to establish civilian advisory boards in order to settle industry and government differences.¹² These boards should be set up in peacetime on a standby basis to be used during the emergency period. Such advisory boards can provide valuable information not only on contracting and war profits but also on labor relations, wages, overtime policies, materials, equipment rentals, and public relations.

It would be wrong to assume that all the emergency powers necessary for the next mobilization are already codified. Since WW II and Korea significant bodies of law have come into being, particularly in the areas of socio-economic reform, environmental protection, and safety. Although certain emergency relief procedures are contained in these bodies of law, they have not been tested. It would be natural for agencies newly created for peacetime protection of our society to attempt to perpetuate rules and regulations in wartime. The Federal Emergency Management Agency (FEMA) was formed to allocate emergency procedures between departments and agencies of the federal bureaucracy.¹³ Procedures and letters of understanding need to be established prior to the emergency so that mobilization planning can be accomplished within this framework. The Corps of Engineers should take the lead in initiating this interchange for construction. This is essential so that both district engineers and contractors can approach mobilization planning with mobilization, not peacetime, rules.

Issue: Crisis Reallocation of Construction Resources

On M-day or at the point where national priorities become dominated by defense and national survival issues, there need to be mechanisms for reallocating resources. At the start of the WW II mobilization period there was no overt action to stop work on non-essential projects already authorized and funded in order to conserve and reallocate resources. Peacetime construction merely wound down as projects were completed.¹⁴ In the future this process may not be satisfactory where time and other resource constraints make it imperative to turn off construction in those sectors not essential to

defense. For instance, there should be a mechanism to stop work on certain Corps of Engineers water projects in order to generate resources for cantonments and production facilities. Similarly it may be desirable to stop investing in inner city housing and block improvement projects in order to increase housing capacities in outlying host areas. There are numerous nation-building and quality of life construction projects ongoing that could be delayed or cancelled in order that greater efforts may be placed in support of the emergency.

There is a precedent for project review and stopwork orders for nonessential construction in the records of the Facility Review Committee of the War Production Board (WPB) during 1942 and 1943. This board was able to choke off projects amounting to \$1.3 billion from government programs including much of the civil works construction of the Corps of Engineers. In addition, the deterrent value of these review procedures caused a significant reduction in non-emergency related proposals.¹⁵ Unfortunately these mechanisms did not come into being until 1942, well into the war. The Facility Review Committee was composed of members of the WPB, Army, Navy, and the Maritime Commission. A similar organization in today's environment would involve membership from FEMA, Army, Navy, and the Maritime Commission. *The challenge is to establish the organization, the authority, the criteria for review and the procedures now, prior to M-day.*

From the perspective of contractors who must disengage peacetime work and reengage in the mobilization effort, it's vital to know who is in charge. The contractors' lament is: "You _____ Feds! Just when we think we know what your initials stand for, you change your name. As soon as we think we know who we should talk to, you reorganize."¹⁶

The lesson is that we need to articulate now who does what, with which, to whom, and with what rules. And we must keep that organization simple and constant.

Still at issue is who has authority to reallocate civil works resources on M-day. The Secretary of the Army has authority to reassign construction efforts from the civil to military side. But FEMA also has authority for managing "civil emergency" planning resources and, as the Office of Defense Resources, for reallocating federal funds.¹⁷ The net effect is that civil works could have two emergency reallocators at work over the same resource. To preclude a problem, an understanding between the Department of the Army and FEMA should be reached prior to M-day. The understanding should permit Army to reallocate resources to mobilization. The understanding

should also insure that an interface between the Office of Chief of Engineers and FEMA is maintained so that direct contact with the problems in the civil sector can be maintained through the entire spectrum of national emergency conditions. The Chief of Engineers should not go through DOD to get to FEMA. To this end the role of the Assistant Secretary of the Army (CW) should be enlarged to include pre-M-day planning and post-M-day integration of civil works in defense preparations.

Issue: Congressional Oversight

In WW I formal investigation of emergency construction began with the 1918 inquiry by the Senate into war expenditures. This occurred 9 months after the war had begun.¹⁸ In WW II formal inquiry began in 1941 with investigations conducted within both House and Senate.¹⁹ Within a year and a half after mobilization had begun, but still 6 months prior to the outbreak of war, effective oversight of emergency construction was established. This oversight was maintained throughout the war and well into the recovery period. The failing in these previous experiences was that no oversight was given during the mobilization planning phase.

Congress is responsible under the Constitution to raise and support armies and to provide for organizing, arming, and disciplining the militia. Oversight of mobilization construction planning would appear to be a necessary requirement in fulfilling these constitutional responsibilities. Currently it does not appear that Congress is concerned with mobilization beyond the manpower issues. History clearly shows that construction is a national policy issue. As Thomason stated in 1941, "Congress must share in any censure."

If one waits until after the fact, there can only be censure and recommendations for future generations.²⁰ The future is now. Who's in charge in Congress to oversee emergency planning? To a layman the answer is not clear. Civil works is within the purview of the Public Works Committees. Military construction is within the purview of the Armed Services Committees. The health of the contract construction industry is within the purview of Small Business and Commerce Committees. It appears that no single committee is in charge.

Might this be a reason that there is now, as in the past, no oversight for M-day planning? Might this also be a reason that there is no M-day construction program? Congressional inquiry before the fact is necessary to prevent history from repeating itself. Construction need not be a pacing issue of significant magnitude. Requiring that viable

mobilization construction plans be laid out for public inspection can only add to the defense potential of our Nation, thereby enhancing the deterrent value of the Total Force Policy. Without having a detailed M-day construction program to support mobilization plans, the strategies of forward basing, ready reserves, and rapid deployment are in serious question no matter what scenario is hypothesized.

CHAPTER III ENDNOTES

1. Reported in *Army Research Development and Acquisition*, Vol. 21, No. 21, March-April 1980, p. 4.
2. Truman Committee, *Hearings*, Part 1, p. 239.
3. *Ibid.*, Part 7, p. 2018.
4. Fine and Remington, p. 392.
5. Truman Committee, *Hearings*, Part 7, p. 2036.
6. *Ibid.*, Part 1, p. 71.
7. *Corps Mobilization Capabilities, Requirements and Planning*, pp. 41-58.
8. These figures are derived from the historical relationships shown in Figure 1.
9. 90 Stat. 1255.
10. Fine and Remington, p. 562.
11. Truman Committee, *Report*, pp. 17-21.
12. See Fine and Remington for discussions of the operations and effectiveness of the WW I Board of Reviews of Construction and the WW II Construction Advisory Committee, Construction Contract Board, and National Advisory Council on Real Estate.
13. US President, Executive Order 12127, *Federal Register*, Vol. 44, No. 85, 3 April 1979, p. 19367. See also US President, Executive Order 12148, *Federal Register*, Vol. 44, No. 143, 24 July 1979, p. 43239.
14. See the Annual Report of the Chief of Engineers for each year 1940 through 1945. Civil Works declined from a high of \$262 million in 1940 to a low of \$135 million in 1945. New starts were drastically reduced. These reports can be found in the Office of Chief of Engineers and the Library of Congress.

15. Fine and Remington, p. 592.

16. Anonymous.

17. The term "civil emergency" means an accidental, natural, man caused, or wartime emergency or threat thereof, which causes or may cause substantial injury or harm to the population or substantial damage to or loss of property. Executive Order 12148, para 2-203. See also US Office of Emergency Planning, *Resource Mobilization Plan for Limited War*, Washington, DC, July 1966. This document contains a discussion on the proposed operations of the Office of Defense Resources.

18. US, Congress, Senate, Committee on Military Affairs, *Hearings*. Part 4, Washington, DC, February 1918.

19. Thomason chaired the House committee and Truman chaired the Senate committee.

20. *Truman in his Senate Report* chided the Congress for having failed to support the War Department in proposals to close small, obsolete bases.

IV. POSTURING FOR THE FUTURE

Summary of Points

This monograph contains a great deal of critical comment. The nature of the study question, "What can be done to improve the engineer posture to support mobilization?" caused a focus on areas for improvement rather than strengths. In order to prevent a wrong impression, it is necessary to summarize here the many strengths associated with the Nation's emergency preparedness in the area of construction support. Many of the lessons of the past are incorporated in our institutions and national processes. There exists on the positive side of the Nation's construction capabilities ledger:

- A strong and responsive contract construction industry,
- A large decentralized Army civil works program in being throughout the country,
- A continuing history of effective response in preparing for and mitigating damage in natural disasters, and
- A healthy civil-military synergism between industry and the Corps of Engineers in large nation-building enterprises.

But on the other side of the ledger there exists considerable deterioration through shortcomings:

- To scope out construction requirements for M-day and beyond and to provide resources for detailed planning, design, and dormant contracting (DOD),
- To plan the prudent use of emergency powers (DOD),
- To develop procedures for rapid reallocation and refocus of national construction resources during mobilization (DOD and FEMA), and
- To maintain effective oversight of mobilization preparedness (Congress).

Correcting these shortcomings would materially improve the posture of the Corps of Engineers to support the Nation in a national defense emergency.

Recommendations For Action

In view of evident weaknesses in planning for mobilization, the following are some recommended directions to lessen the impact of

construction as a pacing issue in any future mobilization and to take advantage of the fundamental strength of the US contract construction industry.

For Congress

- Establish oversight of national emergency preparedness with particular emphasis on mobilization.

For the Federal Emergency Management Agency

- Cause all agencies with national emergency preparedness responsibilities to review emergency provisions in law and establish procedures for rapid implementation in times of emergency.
- Examine the reliefs contained in the new bodies of law, particularly environmental, safety, and social law, for applicability to the full spectrum of national emergency conditions. Create legislative proposals where reliefs are inadequate for the emergency conditions hypothesized.
- Include mobilization within the spectrum of national emergency conditions. Insure that other agencies impacting on a defense mobilization integrate their plans into DOD mobilization plans.
- Cause national emergency preparedness resources to be programed as separate line items within each agency's program and budget so that the total resources for emergency preparation and execution are visible for management.

For the Department of Defense

- Cause the Services to develop a detailed M-day to M+180-day construction support plan for full mobilization rapid deployment. Detailed plans should also be developed for the historical contingency of delayed deployment.
- Cause the Services to define construction requirements for total mobilization and develop concepts and plans for meeting the requirements.
- Review historical precedent and procedures for implementing emergency provisions contained in the US Code and provide guidance for planning the use of these provisions.
- Establish criteria and policies for the use of Cost-Plus-Fixed-Fee construction contracts and publish guidance.
- Allocate resources for negotiating dormant contracts for certain critical mobilization construction projects.

For the Secretary of the Army

- Make the Assistant Secretary of the Army (CW) the executive agent for integrating civil works construction assets into DOD construction plans beyond M-day.

For the Assistant Secretary of the Army (CW)

- Initiate the process to resolve the issue of which agency, DOD or FEMA, controls the reallocation of civil works construction resources in a defense mobilization.
- Cause national emergency preparedness planning for civil works, including planning for mobilization construction using civil works resources, to be presented to Congress as a single line item rather than as the "overhead" part of all civil works projects.
- Take action to bring the construction industry into mobilization planning. Establish advisory boards utilizing distinguished membership of the Society of American Military Engineers and other professional engineer societies.

Epilogue

Among all the disasters that befall man, war must surely be the worst. It would appear that war is the one disaster whose occurrence humans could avoid. Yet, we have not acquired the wisdom, perfected the diplomacy, conquered the hunger and disease, or vanquished man's greed sufficiently to do so. Peace at this moment, as in the past, hangs in tenuous balance as we, as a race, move ever closer with our instruments of battle toward assured mutual destruction. War comes when rationality is lost or when one nation feels compelled to make that first, preemptive strike against a potential adversary.

Unfortunately those occurrences arise with a frequency similar to that of the natural disasters of floods, hurricanes, tornadoes, and earthquakes. No one can predict next month's disaster or its size. But we would be foolish not to prepare for the full spectrum that history shows can surely occur. We, as a nation, design and build great breastworks along our rivers to protect our heartlands from the devastating 30-year flood. We build, at great additional cost, earthquake protection into our tallest buildings. And we have learned that these precautions work, not perfectly, but loss of life and property can be substantially reduced. In almost all cases, the benefits returned far exceed the costs.

Refer once again to the construction demands in Figure 1—*"There is a tide in human events . . ."* We would be foolhardy if we did not posture ourselves for a mobilization requiring construction on the order of 5 percent of our current GNP. Construction is not only a mobilization pacing issue, it is a significant national emergency planning issue. It is imperative that we allocate resources for a national emergency planning effort and make visible the results. Perhaps through these means we can add another dimension to deterrence.

APPENDIX

Emergency Powers Summary (US Code)

Title No.	Section	Summary
5	3326	Permits the appointment of retired members of the Armed Forces to positions in the Department of Defense (DOD) when a state of national emergency exists.
5	7902 and implementing Federal regulations	Permits waivers of national safety standards and procedures.
10	2231, 2233	The Secretary of Defense (SEC-DEF) is authorized to acquire and expand facilities necessary for use of reserve components in time of war or national emergency.
10	2304	Permits contracts for supplies and services to be negotiated without advertising if determined to be necessary in the public interest "during a national emergency declared by Congress or the President."
10	2663, 2664	The Secretary of a military department may "in time of war or when war is imminent," take and use property, including property for lumber production, immediately upon filing of petition for condemnation.
10	4501, 4502 9501, 9502i	"In time of war or when war is imminent" the President may order necessary products to be manufactured at private plants or take over such plants upon refusal to comply with such orders; and maintain lists of plants capable of war production.

10	4742, 9742	Relates to Presidential control of transportation systems "in time of war."
10	4776, 9776	If in "an emergency" the President considers it urgent, a temporary air base, fort, or fortifications may be built on private land if the owner consents in writing.
10	4780	Relates to acquisition of buildings in the District of Columbia in time of war or when war is imminent.
10	9773	Relates to the acquisition and construction of air bases and depots during national emergencies.
15	2621	Provides waiver procedures of pollution abatement requirements for toxic substances.
16	470	Provides relief from the Endangered Species Act.
33	1323	Provides waiver procedures of water pollution standards for Federal facilities.
33	1344	Provides relief from state laws in maintaining navigation channels.
41	11	Permits the Armed Services to purchase clothing, subsistence, forage, fuel, quarters, transportation, medical and hospital supplies, which, however, shall not exceed the necessities of the current year, without an appropriation from Congress.
	300J-6(b), 4903 7412, 7418, 7606	Provides exemptions to water, air, and noise pollution abatement provisions.
42	6861	Provides exemptions to solid waste disposal standards.

50	1431	Relates to authorization to enter into defense contracts or into amendments or modifications of defense contracts without regard to certain other provisions of law.
50	1211, 1213, 1216	Relates to renegotiation of contracts.
50	2291-2295	Relates to authorities in a Civil Defense emergency.

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